

Name: \_\_\_\_\_ P: \_\_\_\_\_

HW #32 Find Unknown Measurements given Area or Perimeter

FORM A

Geometry: Due Tuesday, October 29<sup>th</sup>, 2013

1. A square and a rectangle have the same area. If the side length of the square is 8 inches, what is the width of the rectangle if the length of the rectangle is 4?

$8 \times 8 = 64$   
 $A = S^2$   
 $8^2 = L \cdot W$   
 $64 = 4 \cdot W$   
 $W = 16$

\*Substitute "S" & "L"  
\*Then solve for "W"!

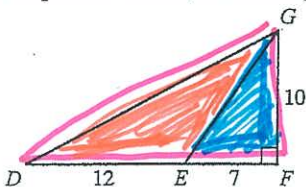
Width: 16 (units!)

2. The perimeter of a rectangle is 64 feet. The width of the rectangle is half as long as its length. Find the length and width of the rectangle.

$P = 64$   
 $P = 2L + 2W$   
 $64 = 2L + 2W$   
 $32 = L + W$   
 $W = \frac{1}{2}L$   
 $32 = L + \frac{1}{2}L$   
 $32 = \frac{3}{2}L$   
 $L = \frac{64}{3}$   
 $W = \frac{32}{3}$

(list formula)  
substitute from given info. in problem.  
① Substitute 64 in for P  
② Substitute what W = in for w in the perimeter formula.  
③ Solve for L  
④ Solve for W

3. In the figure below the lengths of line segments DE, EF, and FG, are given, in units. What is the area, in square units, of triangle DEG?



- A. 29
- B. 47.5
- C. 60
- D.  $6\sqrt{149}$
- E. 120

4. A square and a semicircular region have the same perimeter. If the length of the radius of the semicircular region is 16, what is the length of one side of the square

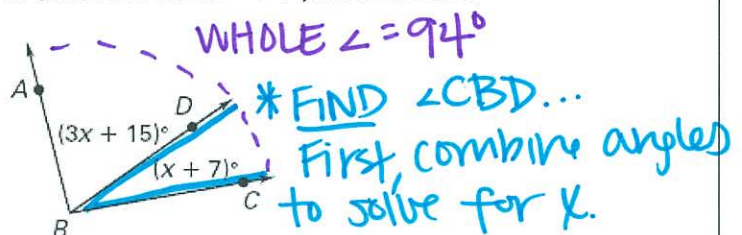
$P_{\text{square}} = 4s$   
 $P_{\text{semicircle}} = \frac{1}{2}(2\pi r) + 2r$   
 $4s = \pi r + 2r$   
 $4s = 16\pi + 32$   
 $s = 4\pi + 8$

\*Substitute what you know & solve for "s"

Side =  $4\pi + 8$  (units!)

5. A rectangle has an area of 60 meters, and a width of 4 meters. What is the perimeter of the rectangle? TRY on your own. Start by drawing picture & listing formulas.

6. Given  $m\angle ABC = 94^\circ$ , find  $m\angle CBD$

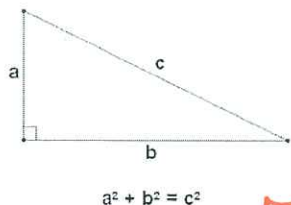


# GRASP REVIEW!

(Mind the GAP with complete sentences!)

Example of what this looks like

7. If the coordinates of a square that is inscribed in a circle are  $(-3,6)$ ,  $(5,6)$ ,  $(-3,-2)$ , and  $(5,-2)$ ; what is the area of the circle? (Note you will have to use the Pythagorean Theorem and might have to look up what inscribed means. We believe in you!)



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- Inscribed = Square is IN the circle & its 4 corners touch the circle.
- Coordinates: \_\_\_\_\_
- Pythagorean Theorem:  $a^2 + b^2 = c^2$  - - - - - (used for RIGHT triangles)

A

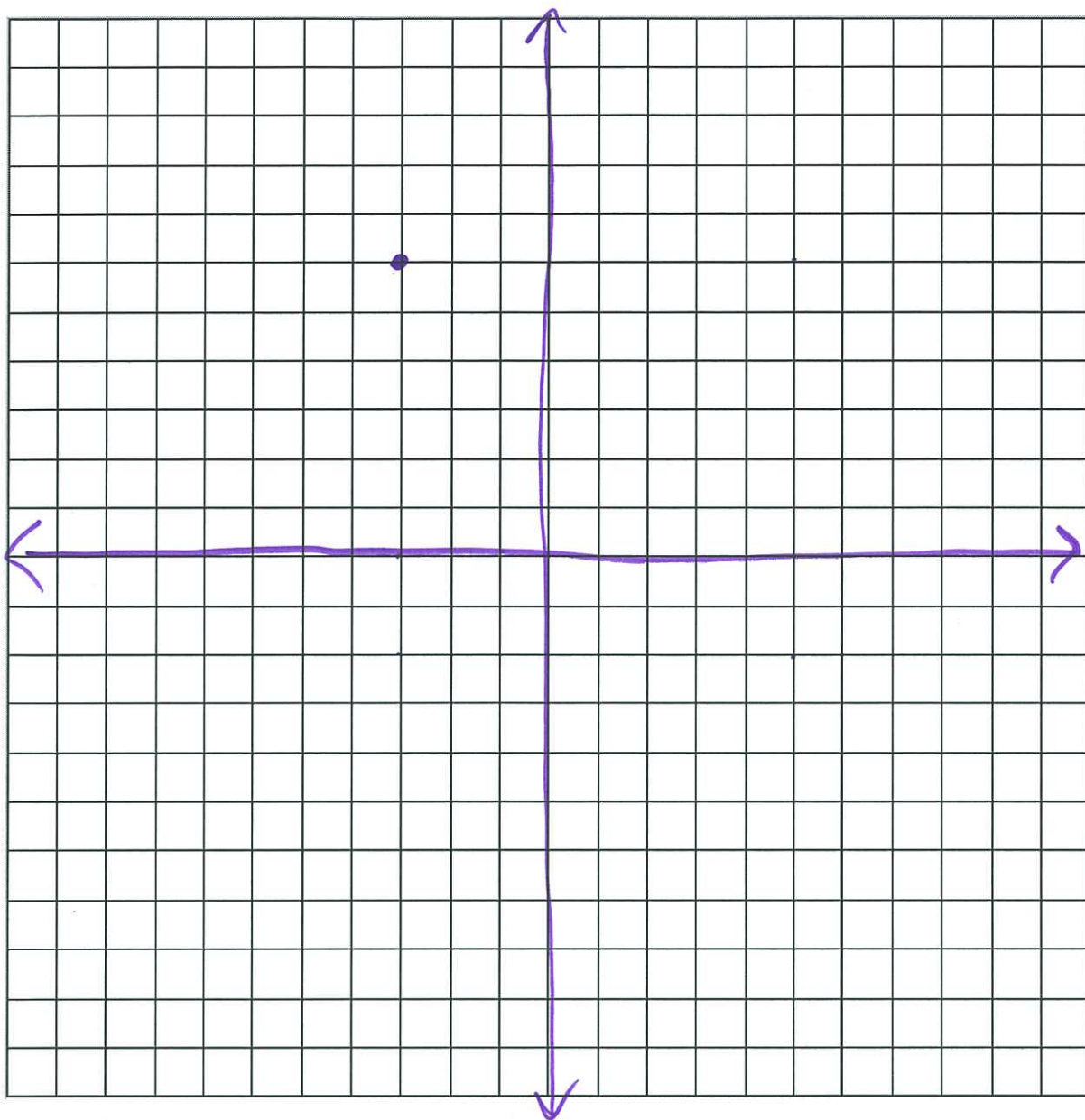
Because I am given coordinates, I will \_\_\_\_\_ them on the attached graph paper. I will then ~~as~~ draw a \_\_\_\_\_ around the square. I will draw a line between opposite corners of the \_\_\_\_\_ of the circle. This will allow me to find the \_\_\_\_\_ of the circle. I will divide by \_\_\_\_\_ to find the \_\_\_\_\_ of the circle. Finally, I'll find the \_\_\_\_\_.

S

PROVE it. This must be a SOLID effort!

P





- ① Draw square
- ② Draw circle around square. It must touch each vertex of square.
- ③ Draw a line from  $(5, 6)$  to  $(-3, -2)$ .  
This is the                      of the circle.
- ④ ~~How do you~~ Find the length using  

$$a^2 + b^2 = c^2$$

$\nwarrow$   
 count units  
going up & down

$\searrow$   
 count units going side to side.

 $\hookrightarrow$  Diagonal!
- ⑤ How do you find the radius now?
- ⑥ Solve for area!

Name: \_\_\_\_\_ P: \_\_\_\_\_

HW #33 Area and Perimeter GRASP Review

Form A

GEOMETRY

Due Wednesday, October 30<sup>th</sup>, 2013

# GRASP REVIEW! (Mind the GAP with complete sentences!)

1. A rectangle is inscribed within a circle. The coordinates of the rectangle are  $(-8,3)$ ;  $(20,3)$ ;  $(-8,-5)$ ; and  $(20,-5)$ . What is the area and circumference of the circle?



Example of what this should look like on your graph paper.

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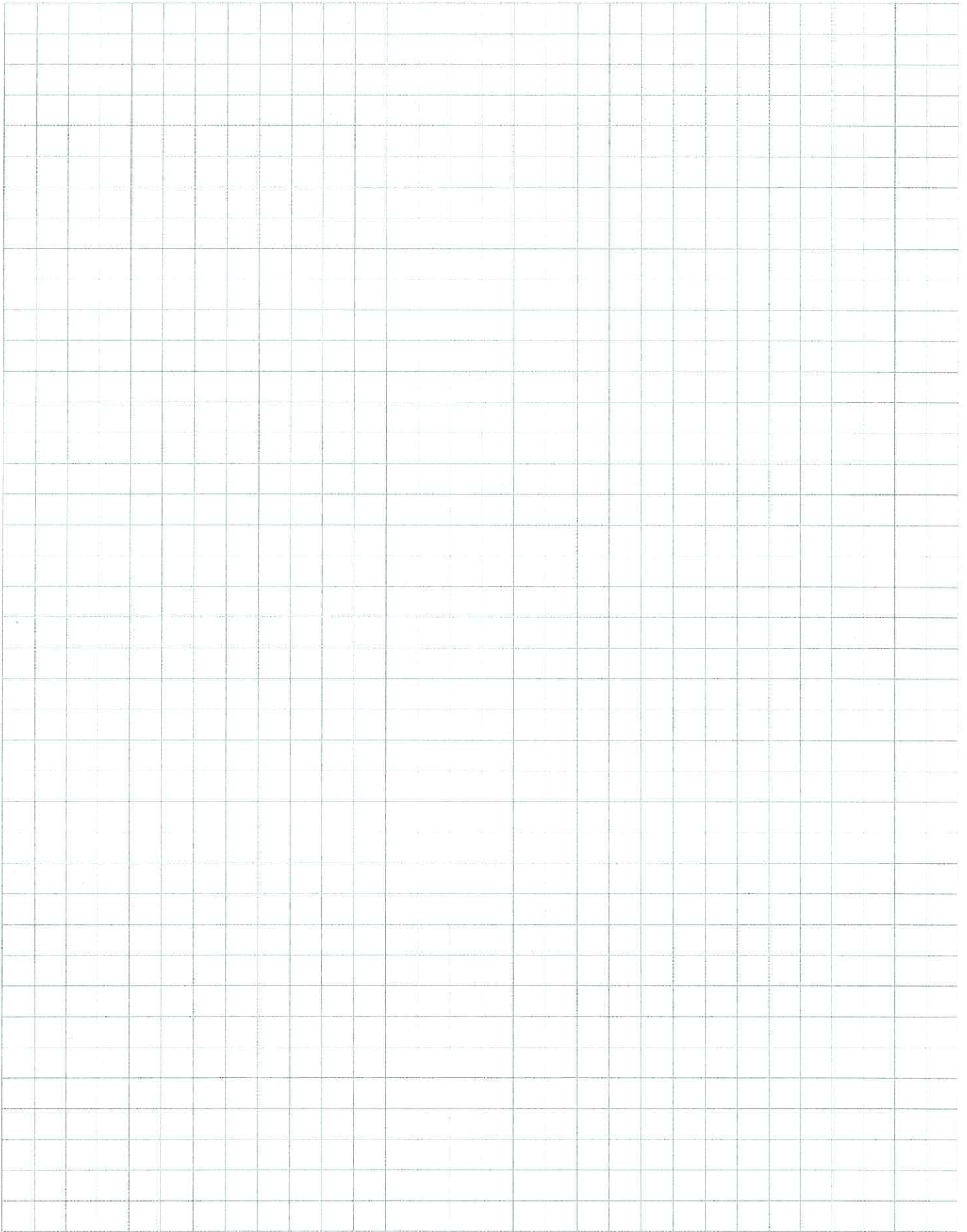
\*This is the same type of problem you saw in yesterday's homework! Refer back to it for steps!!

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HW33#1





# GRASP REVIEW! (Mind the GAP with complete sentences!)

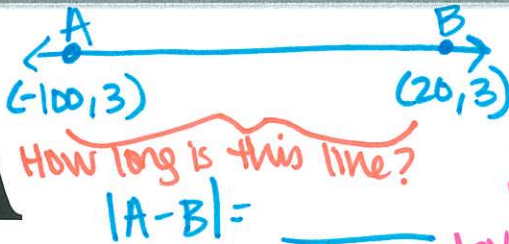
2. The diameter of a circle extends from  $(-100, 3)$  to  $(20, 3)$ . If the area of this circle is the same as a square, what is a side length of that square?

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- Area of circle: \_\_\_\_\_
- Area of square (DON'T use L.W): \_\_\_\_\_
- Diameter: \_\_\_\_\_

A



I must first find the length of the \_\_\_\_\_ of the circle using the drawing to the left. I then will find the radius by dividing the diameter by \_\_\_\_\_. Finally, I will find the \_\_\_\_\_ of the circle, and set it equal to the area of a square. Then, I will solve for \_\_\_\_.

S

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